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The Solandt Commission

Interim Report

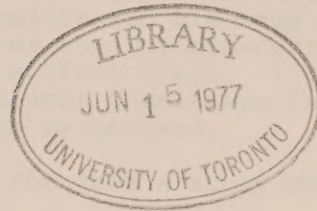
October 31, 1972



SOLANDT COMMISSION

October 31st, 1972

The Hon. A.B.R. Lawrence, Q.C.
Provincial Secretary for
Resources Development
Room 180
Main Building, Queen's Park
Toronto, Ontario



Dear Mr. Lawrence:

In this report to you are the results of my hearings on the Nanticoke to Pickering power line. I have concluded that before a final route selection can be made the studies presented by Ontario Hydro must be substantially extended in scope and depth. These studies should be so planned that when they have been completed and presented to the Commission it will be possible for the Commission to give you the very specific advice that you seek. I, therefore, suggest that the Commission be asked to assume responsibility for the additional study that is required. I make this suggestion mainly in order to save time but partly because the Commission might be able to facilitate the communication with the public that will be such an essential part of this further planning process.

Mr. Bruce Howlett appeared before the Commission as an expert witness on the environmental factors in power line location. Before he appeared I had ascertained that he was acceptable both to Ontario Hydro and to the main Conservation Groups. His presentation proved to be very helpful and he retained the good will and respect of all groups. I attach for your information a brief biography of Mr. Howlett. I would suggest that he be retained to direct the study and to be responsible for writing a report and presenting his conclusions to the Solandt Commission. It is proposed that he would work in close collaboration with Ontario Hydro who would have to supply most of the raw material for this study. In addition, this would insure that Mr. Howlett did not duplicate the

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extensive work that has already been done by Ontario Hydro. I have spoken to Mr. Gathercole about this and he is quite agreeable both to the choice of Mr. Howlett and to the plan for collaboration with Ontario Hydro. In addition, to the co-operation of Ontario Hydro Mr. Howlett and his team would have to be assured of the cooperation of the Toronto-Centred Region Planners and the Niagara Escarpment Task Force. I do not think that either Mr. Howlett or the Solandt Commission can be successful unless this cooperation is assured.

The terms of reference for such a study should include the following:

The object of the study is to provide advice to the Commission on the best available route for a 500 kV line from Middleport to Pickering. In making the route selection the primary emphasis must be given to environmental factors in key areas such as the crossing of the Niagara Escarpment. In other areas the balance will be different but in all cases the environmental, social and economic factors must be considered. The aim is not to choose what is theoretically the best route but to choose a good route along which the line can be built quickly with the minimum of environmental damage and of local opposition. The study should also consider whether it is advisable to have five lines abreast and, if so, whether they should be included in a larger joint use utility corridor or whether it would be wiser to distribute the lines between two or more corridors.

I would propose that Mr. Howlett and members of the Hydro staff working with him should begin to involve the public as early as possible. Long before any recommended routes are available for discussion it should be possible to involve the public in deciding on the factors that need to be considered in choosing the line and the weight to be attached to them. My Commission might be used as a medium for arranging suitable meetings.

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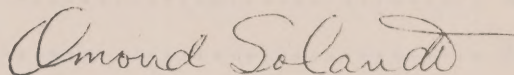
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I have ascertained that Mr. Howlett has time available and is willing to undertake this study. I shall await your reaction to my report before making any further arrangements.

This has been an interesting and rewarding assignment. I hope that it can be speedily carried through to a successful conclusion.

Yours sincerely,



Omond M. Solandt
Solandt Commission
9th Floor, Ferguson Block
Queen's Park, Toronto

OMS/lw
Encl.

P.S. A suitable map to be included in the published report is in preparation. To facilitate your reading I enclose a copy of the map from the Ontario Hydro Submission.

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Foreword

By contemporary standards this has been a mini-Commission. My own inclination was to keep the Commission's deliberations as short and simple as possible and in this I was encouraged by the Government. As a result the Commission's staff has been incredibly small and the work very strenuous. The main credit goes to James Shantora who combined the roles of Commission Counsel and Secretary and to Linda White who did everything else. Toward the end of the hearings Mr. Shantora turned over the secretarial duties to Mr. Gerald Coyne. To these and to many others in the Ontario Government Service go my most sincere thanks.

Undoubtedly, Ontario Hydro from the Chairman down deserve the main credit for any success that has been achieved by the Commission. They have always shown themselves willing to do anything in their power to achieve complete understanding of their proposals. The same may be said of the representatives of the conservation groups, the concerned citizens and the individuals who appeared. It has been a serious attempt to achieve a meeting of minds and to all who participated go my most sincere thanks.

Omond M. Solandt
October 31st, 1972

SOLANDT COMMISSION REPORT

Introduction

The Hydro-Electric Power Commission of Ontario* has been successfully meeting the requirements of the citizens of Ontario for electric power since its foundation more than 66 years ago. It is now among the world's largest electric utilities and has established an enviable reputation for reliability, low cost, widespread distribution of power and for remaining abreast of modern technology. Since power requirements are doubling every 10 to 12 years the system must be constantly expanding. The economies of scale in power plants are so important that as the system grows, the individual generating stations get larger and, consequently, the steps in this expansion become bigger and more obvious to the public. At present there are four major generating stations in various stages of completion. The Pickering Nuclear Plant with three out of four units operating; the Nanticoke Coal-fired Plant just beginning to produce power; the Lennox Oil-fired Plant near Kingston in the late stages of construction and another nuclear plant at Bruce on Lake Huron well underway. Load growth is forecast to keep pace with the output of these generating stations as they come into operation. Consequently, there is an urgent need for a major increase in transmission facilities.

Ontario Hydro has naturally envisaged the need for increased transmission facilities in the Toronto area for many years and has watched the northward growth of the city with great concern. Early conceptual planning for a new major east-west link began when the 500 kV** line from the north was planned in 1962. When land was purchased for the Nanticoke Generating Station in 1966 the need for a link from Nanticoke to Pickering was definitely established. Although the specific need for the line was established by the construction of generating stations at Nanticoke

* Hereafter referred to as Ontario Hydro or simply Hydro.

** kV = kilovolts = thousand volts

and Pickering it is a little misleading to call it "the Nanticoke to Pickering Transmission Line" since the purpose of the line is not to transmit power from Nanticoke to Pickering or the reverse but rather to act as a major link between these generating stations and the main load centres in Metropolitan Toronto, Hamilton, Oakville etc. and also to provide major transfer capacity within Hydro's southern network. Ontario Hydro considered four routes for this line: north, middle, south and parkway. Ontario Hydro selected the middle route and initiated discussions about it with the municipalities concerned. To quote the Ontario Hydro Submission*, "During the last three years Ontario Hydro has held many discussions concerning the overall Nanticoke to Pickering route with municipal and conservation authorities, provincial government agencies, and groups of involved citizens. Six of the nine municipalities in the section of line dealt with in this Submission between Puslinch Township and Whitchurch-Stouffville have agreed that the Middle Route does not conflict with planned development. One has left the decision to Hydro, one has asked for more information, and one has so far declined comment."

In spite of this substantial acquiescence by the municipalities strong opposition to the line remained. This was expressed particularly by the Coalition of Concerned Citizens, supported by the Sierra Club and the Conservation Council of Ontario who presented a petition to the Premier of Ontario. After hearing their representations the Premier decided to establish a Commission under the Public Inquiries Act to investigate the problem. By Order-in-Council #OC-2053/72 dated June 21st, 1972, I was appointed under the provisions of the Public Inquiry Act, 1971, "to inquire into the transmission of power from Nanticoke to Pickering and to make recommendations thereon for the information

* Submission of Ontario Hydro to the Solandt Commission, July 31st, 1972 - Exhibit A-1.

and consideration of the Provincial Secretary for Resources Development on or before the 15th day of September, 1972." A later Order-in-Council removed this restrictive date, however, the fact that such an early deadline was included in the original Order-in-Council indicates the urgency attached to the matter by the Government. After preliminary discussions with Government officials, Ontario Hydro and representatives of major conservation groups that had protested against the line I concluded that my task could be more exactly defined as - to advise the Minister on how best to reconcile Ontario Hydro's plans for building a power distribution system to meet the growing power requirements of the citizens of Ontario with the objections of conservationists and other concerned citizens to the projected line from Nanticoke to Pickering. I also concluded that I should not only advise the Minister on the best route for a power line from Nanticoke to Pickering but should also give him secondary advice on how the process of planning and consultation might be improved in the future in order to avoid confrontations of the type that led to the appointment of the Commission.

It was obvious that one of the principal tasks of the Commission was to provide a forum in which Hydro could present their proposal in a systematic and coherent way to interested citizen groups and where the citizens would have an opportunity of cross-examining Hydro and later presenting their views based on a more thorough understanding of Hydro's proposal. It was also hoped that these discussions would enable Hydro to understand more fully the objections that were presented to their proposal. Since the problem presented to the Commission was really one of trying to achieve a mutual understanding rather than of judging between the cases presented by two adversaries, every effort was made to have the proceedings as informal as possible. All hearings were held in public and many of the interested parties

presented their own briefs and did their own cross-examination. Some of the major conservation groups were represented at most of the hearings by legal counsel and Ontario Hydro's counsel intervened from time to time. In every case the legal counsel cooperated admirably with the Commission in it's effort to avoid the feeling that the hearings were confrontations between two adversaries.

The hearings began on Monday, July 31st, 1972. At the first hearing Ontario Hydro tabled a report outlining their proposal and also at my request gave a verbal presentation of the proposal. On the day of the presentation questions were allowed for clarification only. In order to give the interested groups ample time for preparing questions cross-examination did not begin until Monday, August 21st, 1972. The original plan was to complete the cross-examination of Ontario Hydro before calling any other witnesses. Unfortunately, due to the difficulty of forecasting the times taken for cross-examination it was necessary to interrupt the cross-examination of Ontario Hydro in order to hear some expert witnesses. A brief diary of the names and descriptions of the witnesses that were heard is included in Appendix "A".

In order to achieve a more orderly discussion during cross-examination, related sections of the Ontario Hydro report were grouped into a few broad classifications and cross-examination was completed on one group before proceeding to the next. The grouping was:

1. Engineering aspects (Parts 2, 3 & 7);
2. Land Use and Environmental aspects (Parts 4, 5 & 6);
3. Land Compensation and Policies (Part 8);
4. General Summation (Parts 1 - 8).

As a result the structure of the hearings and of this report closely parallels that of the Hydro Submission. As a further aid to orderly procedure those who wished to cross-examine Ontario Hydro were called in alphabetical order under the following headings:

- Municipalities
- Associations and Organized Groups
- Individuals and Corporations.

In the case of presentations other than by Ontario Hydro, Hydro was given the first opportunity to cross-examine.

The following quotation from the introduction* to Ontario Hydro's Submission very aptly summarizes their presentation:

"The line between the Nanticoke and Pickering stations is vital to the transmission of power from generating stations to centres of population. About half of the first section of the line - the section from Walpole Township on Lake Erie to Puslinch Township near Hamilton - has been built. The second section, from Hamilton to the Oshawa area, is in the planning stages.

The first part of this submission explains the need for the line, the impracticability of building it underground, discusses technical considerations and evaluates the alternative routes which were examined.

The Middle Route, considered best by Hydro,

* (Section 1.0, Page 05)

crosses the Niagara Escarpment north of Boston Mills, passes north of Bolton, crosses highway 11 between Newmarket and Aurora, then travels either south or north of the proposed airport in Pickering Township.

The selection of the Middle Route was based on a number of sound, practical reasons, including environmental factors:

- a. it conforms to good community planning.
- b. it causes the least disruption to property owners and the farming community, consistent with the necessity of building lines reasonably close to population centres.
- c. it involves fewer river crossings.
- d. it affects less woodlot acreage.

A North Route, traversing the Escarpment in the Mono Mills area and crossing Highway 400 north of the Holland Marsh and Highway 11 between Bradford and Newmarket, was examined but found to be much less desirable than the Middle Route.

A South Route, which crosses the Escarpment north of Speyside, passes south of Georgetown, north of Brampton, and follows

a course past Kleinberg and across Highway 11 between Oak Ridges and Richmond Hill, was also considered. It was found to be more disruptive than the Middle Route because a larger number of buildings would be affected and more people would be dislocated. It would also create a second artificial severance barrier near the Parkway Belt in Vaughan and Markham Townships.

A fourth route along the proposed Parkway Belt traverses more highly urbanized land, is too narrow in sections, and with the addition of high voltage lines would cause even more dislocation to people and property."

Those who were present to cross-examine Ontario Hydro could be divided into three broad classifications. First, the general conservationists represented by The Conservation Council of Ontario, The Federation of Ontario Naturalists, and The Sierra Club of Ontario. They were concerned with the impact of the proposed line on the environment in general. Their emphasis was primarily on the natural environment and on the preservation of forests, streams, wildlife etc. They appeared to place less emphasis on disturbances to human habitation. Their concern was general rather than local and they would presumably appear to present a similar point of view at hearings dealing with any part of the Province. Second, the organized groups of concerned citizens represented both by a spokesman for the Coalition of Concerned Citizens and by spokesmen for local groups. Their interest was partly in the protection of the environment in general and partly in the protection of

specific areas in their own district which they considered to be of special importance and occasionally to advocate diversion of the line away from their own land. The third group were individual citizens or small groups some of whom came to make an unabashed plea for the importance of their own property and to urge that the line be relocated in order to avoid crossing that property.

Only those who were for some reason apprehensive about the impact of the line either on the environment in general or on some specific geographical location appeared to state their case. There were no representatives of the great silent majority and the Commission can only speculate on their feelings. It is certain that some at least of them would not support additional expenditure in order to protect the environment in general or individual properties in particular. They might urge the building of the cheapest, simplest and most direct line in order to provide abundant, dependable, low cost power to the citizens of Ontario. This view was expressed in a few letters to the Commission but no one came forward to support it at the hearings.

In future hearings of this kind some effective way must be found to achieve a more representative cross-section of popular interest. This is certainly not said in criticism of those who did appear. They did an honest, intelligent, effective, always good-natured and sometimes humorous job of presenting their particular point of view. What is needed is an equally effective presentation of viewpoints that were absent from this hearing. The silent majority often complain that they are dominated by small local interest groups. If in some cases this is true it can only be counteracted by the silent majority becoming vocal.

If open planning is to be effective every shade of opinion must be heard.

I will now attempt to give my own summation of all the evidence presented to the Commission in the original Submission of Ontario Hydro, during cross-examination on this material and in subsequent presentations both written and oral by other interested groups and individuals. In organizing this material I have again generally followed the structure of the Hydro report. Almost all the factual material to which I refer is available in Exhibits or in written submissions that were lodged with the Secretary of the Commission and are available to the public. A relatively small amount of important evidence came out in cross-examination and is not recorded in these written submissions. For this material I have depended on my own notes but it is available on tape should the need arise. Since the ultimate responsibility for the accuracy of the summation is entirely my own I have made no attempt to support each section by specific quotations from this written or oral testimony.

Because I have concluded that I must recommend to the Minister a very substantial extension of Hydro's studies before a firm selection of a route for the line can be made, this report is much shorter than it otherwise would have been. If the studies that are recommended are undertaken then much new light will be shed on almost all the problems that were discussed at the Commission hearings. This is particularly true in connection with the government planning mechanism, with the need for and organization of open planning and the discussion of the principles of and the methods for environmental impact studies. This report has, therefore, been written so that if the Minister accepts my recommendation it will become an interim report to

be followed later by a more definitive statement which will be based on the further research and analysis that is proposed.

Need for Facilities

Ontario Hydro adequately documented the case for expected load growth and for their plans to increase generating capacity to meet this load growth and hence for the need to increase bulk transmission capacity in step with the increasing growth of load and generating capacity. Several questioners suggested that while agreeing that the Hydro Projections for load growth were probably accurate they felt that Hydro should be taking active steps to try to reduce the rate of load growth in the Province. Hydro was repeatedly questioned concerning the size of their Public Relations budget and of the degree to which advertising increased the load growth. Hydro defended themselves on the grounds that their advertising did not increase total energy consumption by the citizens of Ontario but if it had any effect this was to divert energy consumption from fuels such as coal and oil to electricity. While I strongly agree with the idea that our society should begin now to try to restrict the growth of energy consumption in order to conserve resources and minimize environmental pollution I do not see it as part of Hydro's task to spear-head this movement. I see Hydro as an organization that has been assigned responsibility for meeting the electrical energy needs of the people of Ontario rather than dictating to them how much electrical energy they should use.

The next stage in the discussion dealt with the broad systems planning aspects of the proposed Nanticoke to Pickering connection. Hydro pointed out that the first step was to design the electrical connections of the network to have an

appropriate layout and capacity. This had to be done before there could be any discussion of specific geographical locations for the links in the network. Hydro pointed out that their grid is such a complex system that there is no uniquely optimum solution to its design. The only way to find out whether a particular change in the layout of the grid will be satisfactory is by means of complex computer simulation. Programming the simulation and performing the necessary calculations to test an individual solution may require several months. Hydro said that they had simulated the proposed inter-connections and found that they would supply the necessary capacity, stability and security for the system. They agreed that the system was so complex that there might be other acceptable solutions but it was very unlikely that there was a better one.

Reliability Considerations

Hydro witnesses made a determined and not always completely successful effort to convey to the Commission and to the audience the concepts of "security" in a power grid that are such an important element in reliability of power supply. Questioners repeatedly asked Hydro to put their estimates of reliability in quantitative terms. They, for example, hoped to get comparative figures of the percentage probability of a black-out in 1976 if the 500 kV line had been build and if it had not been built. Hydro argued that the complexity of the system was such that figures of this kind just could not be calculated. It showed that the "security" of the system must mainly be defined in terms of the duplication or redundancy of the important elements in the system. Following the widespread black-out in the north-eastern United States and Canada in 1965 The North-East Power Coordinating Council was formed from the

major utilities of the New England, New York, Ontario and New Brunswick. This committee laid down general criteria for the degree of duplication and other features that must be maintained in a system in order to achieve acceptable security. Each member utility has agreed to maintain these standards as a prerequisite for the interconnection with the other utilities. Hydro maintained that they were not being overly conservative in their emphasis on security but were only attempting to adhere to the NEPCC requirements.

Choice of Transmission System

There was a good deal of discussion as to whether Ontario Hydro had chosen wisely in picking 500,000 volts AC for their bulk power transmission system. Some argued that they should have used lower voltages to facilitate underground construction. Others argued they should have chosen a higher voltage in order to minimize the number of lines required. There is obviously a large element of engineering judgment in the choice, however, Hydro's presentation was very convincing and I believe their decision was generally accepted as being a wise one. Table I which was presented by Mr. Crowley shows clearly how the amount of land required for a given capacity decreases with increasing voltage. Unfortunately, the security requirements of a network rarely permit carrying the total load on a single circuit. This is one important reason why Hydro did not choose 765 kV for their bulk distribution system.

TABLE I
RIGHT-OF-WAY REQUIREMENTS

(Transmit 4,000 MW* for 100 Miles)

<u>Voltage</u> <u>(kV)</u>	<u>Capacity</u> <u>Per Circuit</u> <u>(MW)</u>	<u>Number of</u> <u>Circuits</u>	<u>Right-of-Way</u> <u>Width</u> <u>(Ft.)</u>	<u>Per Mile</u> <u>(Acres)</u>
115	30	133	5025	610
161	70	57	2175	260
230	140	29	1200	145
345	770	5	240	30
500	2200	2	200	25
765	4300	1	135	15

Reference: HV and EHV Transmission Planning
by Walter Scott, Commonwealth Associates Inc.
ENERGY INTERNATIONAL, July 1972

* MW = Meggawatt = one million watts or one thousand kilowatts.

Hydro was carefully and extensively cross-examined on their circuit requirements. Several questioners emphasized the desirability of using multi-circuit towers wherever possible. Hydro pointed out that in most cases using multi-circuit towers would require more circuits in order to achieve the same security. They also pointed out that multi-circuit towers are in general taller than single circuit towers and, therefore, may be undesirable in areas where it is important to make the line as inconspicuous as possible.

Many questioners doubted the wisdom or desirability of having five parallel tower lines. (The Hydro proposal includes as a maximum in any Section three 500 kV and two 230 kV lines.) The guidelines of the U.S. Federal Power Commission indicate that the number of parallel

lines on one right-of-way should never exceed three. The discussions centred around the difficult terms: visual saturation and visual pollution. In this connection Hydro made it clear that the requirement for the 230 KV lines was not yet firmly established and that in fact they might never be needed.

However, Hydro repeated their feeling that it would be far more sensible to obtain the full 610 feet now rather than have to add to the width of the right-of-way at some future date.

Underground Transmission

Hydro presented a convincing case that the technology of underground transmission was not yet adequately developed to use it even for a relatively short distance on such an important link in their network as the Nanticoke to Pickering line. Many questioners were critical of Hydro for not having put more time, money and effort into perfecting underground transmission technology. Nevertheless, I believe that everyone accepted the fact that it was not now practical for this particular application. Direct current transmission was similarly dismissed as impractical because of the short length of the line and the large number of conversions from AC to DC and from DC to AC that would be required.

The possibility of using a submarine cable in Lake Ontario for the greater part of the route from Nanticoke to Pickering was suggested. If the primary purpose of the link was to connect the two generating stations then this would be a possibility well worth considering. However, since the line is primarily to interconnect the two power plants with many load centres in the Toronto area the number of dropouts required would make a submarine cable whether AC or DC a quite unattractive alternative.

Major Alternative Routes Considered

Ontario Hydro's approach to route selection is very well and briefly outlined in Section 4.1 (page 19), General Constraints In Route Selection, in the Hydro Submission.

"In establishing a route for a high voltage transmission line, Ontario Hydro develops a number of alternatives and chooses one which will cause minimum disruption to people and properties, has a minimal effect on the environment and meets system requirements at acceptable cost.

In establishing the route of a line, every effort is made to avoid built-up areas, such as villages, towns and cities, developed properties, places of residence and sets of farm buildings, churches, schools, cemeteries, historical sites and established parks.

Rights of way are selected with a view to keeping to a minimum conflicts with present or planned uses of the land on which they are to be located. The Official Plan of any affected municipality is reviewed, and where possible, diagonal severance of property is avoided by following the Township fabric via lot lines and property limits.

Government Departments such as the Ministries of Transportation & Communications, Natural

Resources and Intergovernmental Affairs as well as local planning boards and Conservation Authorities are contacted early concerning proposed development plans to co-ordinate the line location with their proposed land-use plans."

In cross-examination Hydro witnesses elaborated on this technique. They indicated that they had begun with a careful study of maps and aerial photos of the entire area during which the major constraints had been identified and located. This initial study had been done by experienced locating engineers but no major effort had been made to record the details of the work or to codify or quantify the criteria applied. Hydro agreed that in the early stages of their study the attention given to environmental problems was less than they would now apply. As they said the rules of the game had been changed between the time they began the study and the present time when they are seeking to defend the result before a critical audience. The discussion left the impression that the broad study of the whole area had been rather superficial and that attention had been focused on the Middle Route alone quite early in the analysis. As a result the main effort had been devoted to studying the details of the Middle Route. Equally detailed studies of the alternative routes were not available for comparison, nor was there convincing evidence that any one of the three routes studied was the route of minimum environmental impact.

The ecological survey of proposed routes presented as Exhibit A-6 by Hydro was favourably received and extensively discussed. Its usefulness as an input for route selection was strongly emphasized.

Hydro frankly stated that the matrix study and this ecological survey of the three routes had been done after the selection of the Middle Route had been made. Having been done in this way they were useful as showing in some detail that the Middle Route was not a bad route from the environmental point of view but they were not effective in showing that it was the route of minimum environmental impact. Hydro agreed that in future techniques such as ecological surveys, matrices, computer graphics and overlay studies that included environmental factors should be used as aids in the selection of the routes rather than as confirmation of a selection that had already been made.

The Parkway Belt

Ontario Hydro indicated that the examination of the feasibility of locating the power line in the Parkway Belt had been done by the Parkway Belt Task Force but not directly by Hydro. Mr. Ansel Garfin, Chairman of the Parkway Belt Task Force appeared and presented two reports from the Task Force and submitted himself to cross-examination. Study of their reports and of the testimony given suggests that the examination of the possibility of putting the power line through the Parkway Belt was very superficial. In fact, I was left with the impression that Hydro representatives indicated that the location of the line in the Parkway Belt was not feasible and that this view was accepted by the rest of the Task Force.

Use of Existing Rights-of-Way

Hydro were repeatedly pressed to present proof that there was not spare room on any of their existing rights-of-way to put new lines to carry part of the load proposed for the Nanticoke to Pickering line. Hydro's initial reaction was that they had no unoccupied rights-of-way and it was not possible to rebuild lines to carry higher voltages. In later testimony which is

better summarized in their final argument they indicate that all their existing rights-of-way are full and that the lines on them will be increasingly heavily loaded up to the time that the proposed 500 kV line is built. Consequently, it is not possible to put any of these lines out of service to rebuild them during that period. Their testimony left me with the feeling that they had not exhaustively studied the possibility of increasing the utilization of existing rights-of-way in order to minimize the need for new land acquisition. It may well be that some part of the 500 kV requirement could be met by the use of existing rights-of-way but probably not the whole of it.

Comparison of Routes by the Matrix Method

Ontario Hydro in cross-examination provided a detailed explanation of the matrix method that they used to evaluate the environmental impact of the three routes. It was clear from the cross-examination that not all the audience understood the method and that none of them agreed with it. I personally feel that it is a creditable effort to codify and quantify the many individual judgments that are required to evaluate a route. Several witnesses compared the matrix to the old problem of comparing apples and oranges. Unfortunately, individual views on something as intangible as environmental values are as different as apples and oranges and some way must be found for giving relative weights to them. I believe that it may be possible to develop a matrix system that could be very helpful in this difficult task. I had hoped that some of the conservation groups would accept this challenge and would make the effort to refine the method and to incorporate in a sample matrix their own value judgments. Instead they derided Hydro's judgments but did not present their own in a form that would facilitate direct comparison.

Economic Comparison of Routes

Hydro made it quite clear that economic comparison was very difficult at this stage of planning and particularly when no detailed engineering had been done on the north or south routes. Consequently, they attached little significance to the costs shown. These studies merely indicate that from a preliminary examination the cost differences between the routes are too small to provide a compelling reason for selecting one route or another.

Selection of Preferred Route

In its report Hydro dismisses the north route because it is the least desirable from the point of view of land use and environmental factors. The South Route and the Middle Route Alternative "B" appear to be about equal from land use, environmental and economic standpoints. Hydro argues that the South Route is undesirable because it is only five miles north of the Parkway; whereas the Middle Route is thirteen miles north. Land values are higher and land acquisition might be more difficult on the South Route than on the Middle Route. Hydro points out that Middle Route Alternative "B" is compatible with the uses permitted in Zone 2 of the Toronto-Centred Region Plan. They make no comment on the compatibility of either of the other routes with the Toronto-Centred Region Plan, Section 5.3.4. (page 35) of the Hydro report says:

"5.3.4. Schedule The schedule for establishing the 500 kV lines from Middleport TS to the Oshawa area is critical.

Engineering and field studies on the Middle Route have been completed west of Newmarket and there are no major conflicts with

municipal development plans along the routes. Land appraisals and acquisition of property on the route could commence immediately.

A change now to the South Route would require lengthy discussions with the Townships, Planning Boards and the general public to acquaint them with the plans. Also lengthy studies could be required to resolve local constraints and concerns.

Selection of the South Route would therefore be more likely to result in a serious delay in the in-service date than the Middle Route."

This Section raises one of the most difficult problems that was encountered by the Commission. When I was appointed I assumed that my task was to study the advantages and disadvantages of a series of carefully considered routes and to advise the Minister on how best to make a wise selection between them. To my surprise it appeared that for a variety of reasons only the Middle Route west of Yonge Street had been fully studied. Hydro's original plans for the Middle Route east of Yonge Street had to be scrapped when the Pickering Airport was announced and their new studies had not yet caught up with the earlier ones. With the distribution of the Hydro Submission to this Commission dated July 31st, 1972, the municipalities on the North and South Routes and Alternative "B" of the Middle Route east of Yonge Street learned for the first time that Hydro had even been considering a route through their land. Even at the end of September Hydro had not yet indicated their choice although they had expressed preference for Alternative "B".

It also became apparent on July 31st, and again during cross-examination that Hydro had not fully exposed its plans for drop-outs or branch lines from the main transmission line to transformer stations in the major load centres. These are an essential part of the plan and in selecting a route they must be considered as integral elements of the system. If they are not considered the choice is weighted heavily in favour of the more northerly routes. However, the dropouts from the northerly routes will be much longer than from the southerly routes and when they are taken into consideration the more northerly routes will look far less desirable. The most important of these dropouts are the ones from the Georgetown Transformer Station to the Halton Transformer Station and from near Newmarket down to the Parkway Transformer Station. The importance of considering these dropouts as an integral part of the related power line is dramatically illustrated by the dialogue that took place between Hydro officials and representatives of Whitchurch-Stouffville and Markham who appeared in support of the Middle Route Alternative "A". They argued strongly for Alternative "A" mainly on the grounds that it did not pass through any towns or villages. However, Hydro pointed out to them that if Alternative "A" were chosen now then it would be necessary before 1980 to build two 500 kV lines from near Newmarket to the Parkway Transformer Station along the alignment of Alternative "B". If Alternative "B" were chosen now these connecting lines would not be required. This consideration clearly affects the choice between Alternatives "A" and "B" very greatly.

Testimony from Ontario Government Planners

It is clear both in its report and from the results of cross-examination that Ontario Hydro was not able to have full and effective consultation on its route either with the Niagara Escarpment Task Force or with the Toronto-Centred Region Planners.

The Niagara Escarpment Task Force was established after the decision was taken on the location of the route, while the planning design of the Toronto-Centred Region concept is still in the process of formulation. The Commission attempted to get civil servants working on these two projects to testify but in both cases the request was refused. Both groups pointed out that they were in possession of important planning information that had not been fully considered by the Government. Both offered to give evidence "in camera" if I felt that this would help in the deliberations of the Commission. However, since all other testimony had been in public I refused this offer. As a result the Commission was left without any clear knowledge of how Ontario Hydro's selected Middle Route fitted into the evolving plans of the Government for the Toronto-Centred Region. Ontario Hydro did their best to re-assure the Commission on this point but all they could do was to say that they had no reason to believe that their plan would seriously interfere with either the Toronto-Centred Region Plan or the implementation of the Niagara Escarpment Committee Report. I believe that some much more positive assurance of coordination is necessary before a final route selection can be supported.

Ecological Practices for Rights-of-Way

Hydro's presentation of their new policies for selective cutting, restoration and multiple use of rights-of-way were very warmly received by all concerned. It was generally agreed that these practices would greatly lessen the environmental impact of transmission lines. That when they were widely practiced the public attitude to these lines might well improve. Cross-examination brought out a great deal of interesting and useful elaboration of the section contained in the Hydro report.

In response to questions Hydro argued that they must maintain control of cutting, planting, brush control, etc. on the rights-of-way, but would do their best to consult with the former owner of the land or with adjacent landowners. In the case of multiple use Hydro stated that they would ordinarily give first refusal for a lease to the previous owner of the land. In cases where public use was proposed they would give great weight to the views of the local municipality but would try to avoid uses that were abhorrent to the adjacent landowners. During this discussion it was indicated that in selling land to Hydro an owner could insert a restrictive covenant in the deed of sale which would prevent certain uses of the land.

Many questioners were skeptical of Hydro's ability to live up to their promises and asked what sanctions, if any, would be available to adjacent landowners. Hydro did not think that any sanctions were necessary since they maintained that they have in the past done an excellent job of living up to their promises.

Others were doubtful about leaving to Hydro responsibility both for deciding on ecological housekeeping standards and for viewing progress to see if they were being maintained. If in the future the government sets up some independent agency to watch over ecological practices it might be logical to give this responsibility to the new agency. However, in the meantime, I am confident that Hydro will do a very effective job of implementing the plans that they have outlined.

Weed and Brush Control

All of the conservation groups were very concerned about the methods used for weed and brush control and particularly the use of herbicides and pesticides. Hydro was cross-examined in detail on their past and future practices in this field. In

addition, the Commission called witnesses on the Weed Control Act and on herbicides. All of the testimony supported the view that Ontario Hydro is well aware of their responsibilities in this area and that of the potential danger from herbicides and pesticides. It indicated that they are using the best available materials and techniques and are closely adhering to all Regulations.

Technical Information

Because of the interest in the possible use of the Parkway Belt for the 500 kV line Hydro was examined in considerable detail concerning the problems of building the line above ground past the Toronto International Airport. My tentative conclusion from the testimony was that the line probably could be built past the airport within the Regulations of the Federal Ministry of Transport. However, Ontario Hydro maintained that even if MOT was prepared to accept the risk of an aircraft colliding with the power line Ontario Hydro was not willing to accept the risk of interruption of power supply that would result from such a crash. Material from the Ministry of Transport concerning the Zoning Regulations around Toronto International Airport which were filed as Exhibit B-3-4 confirmed that height clearances would not prevent building the line past the airport. However, MOT officials indicated that each individual power line location would have to be considered, both from the viewpoint of safety and because of possible electrical interference with aids to navigation. The discussion on this point confirmed my feeling that the possibility of using the Parkway Belt had been dismissed rather lightly.

Types of Towers

Throughout the hearings there were repeated discussions on the pros and cons of different tower types. All agreed that the

primary trade-off is between the height of the towers and the width of the right-of-way. By using tall multiple circuit towers it is possible to reduce the width of the right-of-way, usually at a substantial sacrifice in security. Whereas by widening the right-of-way lower towers can be used. Both the expert witnesses and several of the questioners emphasized the advantages of some of the new, very simple and elegant tower designs. As would be expected, opinion was divided concerning the aesthetics of the different tower designs. I believe that all were agreed that there are advantages in varying the design of towers to suit different types of terrain but that it is not reasonable to allow each landowner to choose the tower design to be put on his land.

A problem that was extensively discussed was whether when there are five lines in parallel the towers should march across the country in line abreast or be staggered. Hydro pointed out that if they were staggered the width of the right-of-way would have to be slightly increased to maintain safe clearances of conductors from adjacent towers but that it was quite possible to stagger the towers if this was desired. The usual practice is to keep them in line abreast. This had obvious advantages were they can be located at a lot line.

Land Compensation and Policies

Ontario Hydro's policies on land compensation are described in their Submission. On cross-examination they stated that less than one percent of their land acquisitions were by expropriation. In all other cases a satisfactory settlement was negotiated with the owner.

There was a very lively debate concerning the affect of rights-of-way on the value of adjoining land. Without exception

those who cross-examined Hydro were convinced that the construction or even the threat of construction of a hydro line depressed the value of adjacent land. The only evidence presented to support this view were discussions with knowledgeable local real estate agents. Registry offices contain historical data on land sales that would if collected and analysed throw some light on this problem, but neither side mobilized this evidence. Hydro did present one report that showed that in one area people had been willing to buy land close to an existing power line in order to build expensive houses. This is an interesting observation but does not throw much light on the larger problem. Curiously, there seemed to be a general consensus that an adjacent Hydro right-of-way would probably increase the value of land in an urban or high density residential development.

The Expropriation Act

The Ministry of the Attorney-General provided the Commission with a brief summary of the provisions of the Ontario Expropriations Act. This Act has recently been revised and now appears to give very good protection to the landowner whose property is being expropriated. The one provision of the Act that was questioned by many was that no compensation would be paid to owners of property adjacent to a hydro right-of-way, unless part of their property was actually taken.

The Planning Process

During the hearing it became increasingly obvious that many of Ontario Hydro's difficulties in selecting a route and getting agreement to it arose from the present state of evolution of the planning process in Ontario. It is, in fact, virtually certain that if a complete planning mechanism were working effectively the need for this Commission would not have arisen. It could be argued that the Commission should have begun by

investigating the planning mechanism to see why the present situation arose. This would be an immense task far beyond the terms of reference of the Commission. Therefore, the Commission's inquiries into the planning process were only peripheral and the comments that follow could be in error because of a lack of adequate information. However, if they merely serve to focus attention on the problems they will have served their purpose.

When Ontario Hydro began planning for this line there was no overall regional plan for the area that it crossed. Most of the municipalities affected were in a planning area and a majority already had approved official plans of a rather general nature. The degree to which these plans had been translated into zoning by-laws differed greatly in the different planning areas. In all the planning areas utilities were considered to be a permitted land use throughout the area. It would appear that this permission was really intended for the local distribution of utilities and not for bulk transmission lines or bulk gas and oil pipe lines. Utilities seeking to build gas or oil pipe lines have to seek approval for their projects from the Ontario Energy Board under the Ontario Energy Board Act, R.S.O. 1970, c. 312. Bulk transmission lines for Ontario Hydro were not included under the Energy Act. Therefore, in planning the route of a new transmission line Ontario Hydro merely had to be sure that the proposed right-of-way did not violate any of the important constraints that are listed in their report and did not cross any of the rather few designated areas in official plans where utilities were specifically excluded. This meant that in most cases there was no legal need for close consultation with municipalities. In some cases, a mere exchange of letters with planners was sufficient. Because of this municipal councils

tended to pay too little attention to power line routes and often made no systematic effort to communicate Hydro's plans systematically to their constituents.

Efforts to evolve a coherent regional plan for the Toronto-Centred Region began with the Metropolitan Toronto and Region Transportation Study which was initiated in 1962. Out of the work of this study arose the Toronto-Centred Regional Plan which was published in 1968. This plan divides the Toronto-Centred Region into Zone 1 for urban development and Zone 2 for low density residential and agricultural development. There was no evidence presented to the Commission to indicate that the Toronto-Centred Region Plan had given specific consideration to power lines except to state in it's first progress report in 1971 that the 500 kV line could not be located in the Parkway Belt. The Toronto-Centred Regional Planners operate entirely within the provincial government heirarchy. Public discussion of their work has been limited to the two reports that have been published.

In 1967 the Provincial Government appointed the Gertler Committee to study the problems of protecting and using the Niagara Escarpment. The Committee reported in 1968 and a Task Force was established to advise the Government on how to implement the recommendations of the report. Hydro testified that they had discussed their plans with officials of the Niagara Escarpment Task Force and so were reasonably certain that their proposals did not conflict with those of the Task Force. However, this will not be certain until the report of the Task Force which is expected very soon has been made public.

It is obvious that bulk power transmission lines represent one

of the major linear land uses in our modern society. Since power lines must cross the countryside for distances far exceeding the limits of municipalities or municipal planning areas it is clearly essential that their planning must be guided by some authority having a much wider jurisdiction. It is obviously not possible for any agency to do intelligent land use planning on a large scale if major linear land users, such as Ontario Hydro, are not fully included in their planning responsibilities.

Timing

Ontario Hydro has repeatedly stated that they must have a decision on the route almost immediately if they are to meet the deadline of having the first 500 kV line from Nanticoke to Penville Transformer Station in service in 1975. Repeated questioning failed to elicit any elaboration on this deadline. As Ontario Hydro explained it is not possible in such a large and complex network to specify the exact day on which the capacity of the network becomes inadequate for the demand on it. All that can be said is that as load and generating capacity increase the transmission network will become increasingly inadequate and it is Hydro's opinion that this can become very serious by late 1975 if no new lines are in service by then.

Hydro testified that they had examined emergency plans that could be implemented by 1975 if agreement on a route for the major 500 kV line had not been reached in time. Of several alternatives that they had examined, the one that seemed most promising involved the construction of one new 230 kV line from Middleport to Beach; two from Burlington to near Lakeview and one from near Lakeview to Richview (see Exhibit A-11-1). The

estimated cost of this proposal was about \$23 million of which more than \$14 million would be expenditure that would be required sometime in the future in any case. Therefore, the new expenditure would be of the order of \$8.6 million. It was predicted that this construction would permit reasonably stable and secure operation of the network for about 12 months after the 1975 in-service deadline that had been set for the 500 kV Nanticoke to Pickering line. Hydro said they had not considered what emergency provisions could be made beyond that 12 month period since they considered it to be very unwise to attempt to rely on emergency provisions beyond 1976 at the latest.

General Observations

Before giving my summary and conclusions I have three areas of considerable importance on which I want to make some general observations.

Social Problems

I believe that much of the difficulty encountered by Ontario Hydro in reaching firm and amicable understandings with the municipalities which were involved on the Nanticoke to Pickering line arises from the remarkable lack of homogeneity in the population of nearly all of the municipalities. In a small city, the urban dwellers form a reasonably coherent social group that is distinct from the rural community in which the city is embedded. Even the suburban outgrowths of the city have more in common with the city than with the country. However, as affluence increases and roads improve to the point where relatively long distance commuting by private transportation is possible a new species, the rural estate owner, begins to appear. The term appears to be used not as in the past to indicate a very wealthy person but rather to indicate a person whose economic roots are

in the city and who has chosen to live in the country often primarily to enjoy the relatively undisturbed natural environment. Inevitably, these two groups come into local conflict. The true rural resident has long looked forward to the advent of "development" to bring him the amenities of the city. The rural estate owner is strongly opposed to most "development" because it destroys the values for which he moved to the country. It seemed obvious to me that many of the difficulties encountered by municipal councils and planners arose from this dichotomy of interest. No elected representative of the people can ever please all of his constituents but rarely is he caught between two such widely divergent and strongly held points of view. As is so often the case with social and political problems there is no solution to this one but it is important to recognize its existence and to propose actions that are tolerable to both groups.

The Role and Powers of Ontario Hydro

The Hydro-Electric Power Commission of Ontario has for historical reasons an unique organizational structure and relationship to both the municipalities and the provincial government. Both this relationship and the internal organization of Hydro have been the subject of study by Task Force Hydro for more than a year. The Task Force will be reporting soon and will I am certain deal very effectively with many of the problems that have been in the background of the works of the Solandt Commission. The few comments that follow should, therefore, not be regarded as firm recommendations but rather suggestions to be considered in the light of the Task Force Hydro report when it is available.

Many witnesses have suggested either directly or indirectly that Ontario Hydro should be subject to much closer government control. If this means control in the business management sense than I am

opposed to it. If it means control to ensure that Hydro's plans fit sensibly into broader plans for preservation of the environment and for intelligent land use then I am in favour of it. Hydro should be given very substantial technological and business freedom to carry out its task of supplying the electrical power requirements of the Province at acceptable prices, with tolerable encroachments on competing land uses and with acceptable impact on the environment. This means that Hydro must be responsible for initial systems planning. In doing this it not only carries out a research program of its own but keeps in touch with the scientific and technological communities of the world to ensure that its practice is the best available. At this stage "open planning" involves mainly free communication with technical experts rather than with the public. When a major land use such as a new power plant or transmission line is proposed Hydro must not only evolve its own plans but also expose them at a very early stage to public scrutiny by interested groups. Particularly in the case of linear land use such as a long high voltage transmission line it is quite impossible for Hydro to achieve the best result if it can only deal individually with municipalities. The trade-offs required to find the best route from the point of view of environmental impact and of competitive linear uses of land such as highways, railways, pipelines etc. must be decided in a broader perspective by the provincial government. In making these decisions the government must be guided by advice from a very sophisticated planning team whose jurisdiction is wide enough to cover the entire proposed linear use of land but whose planning is also as "open" as possible.

To meet these needs the province may well have to establish some new institutions. There is a good deal of pressure to have an independent environmental council that could examine the

environmental impact of all major land uses and advise the government thereon. A case can also be made for having a body that would critically examine all proposed linear or other major land uses in the province not only from the environmental but also simultaneously from all other relevant points of view. The latter body would be an integral part of the planning mechanism and might be a quasi-judicial body like the Ontario Energy Board. I certainly have not studied the problem sufficiently to give any definitive advice on the details, but merely wish to point out the need for some such mechanisms. In approaching any environmental or land use tribunal Ontario Hydro should be in the same position as other applicants. It should not and presumably does not expect to have complete independence but it must be free to make its own case especially in situations where there is competition for land use.

Open Planning

During the hearings of the Commission one of the most frequently repeated criticisms was that Ontario Hydro did its planning in secret. I could find no real evidence that Hydro made any effort to keep its plans secret. It was just uncommunicative. For many years no one except landowners whose property was affected showed much interest in Hydro plans and so there has until recently been no serious effort to involve the public in the planning. Throughout the discussions there was general agreement by all concerned that suitable mechanisms must now be found to achieve so called "open planning". Some implied that "open planning" should be carried to the stage where the public virtually makes the final decision. I strongly reject this view. I believe that all interested groups in the community should be given an early opportunity to express their views, not only in general, but in response to quite specific

proposals. Ontario Hydro should then evolve a plan designed to take account of all the views expressed and then present this to government for final decision. As long as we live in a democracy we must leave the final decision on major social and economic problems to our elected representatives.

I had planned to put in the report a brief outline of the way in which "open planning" could proceed. However, in the final summation statement to the Commission Ontario Hydro set forth their views and these coincide so closely with my own that I now quote them:

"Since the success of open planning depends upon achieving the maximum in informed public participation, the process must be highly flexible to deal with different needs in different places. It should also be exploratory, in the initial stages, so that it can be refined and improved with experience.

As a means of establishing a practical approach to this principle, Ontario Hydro recommends the following open planning process for the Commission's consideration. To maintain flexibility, it deals with broad phases rather than detailed procedures.

The first phase is to contact appropriate government ministries for comments and to inform municipalities, special interest groups, and the general public of the proposed project. In order to encourage informed public participation,

detailed information is made public, including long-term facility requirements, a map of the geographical area involved; a description of the proposed line and right of way, and the method to be followed in building it; and a detailed list of the guidelines, environmental factors, and so forth which will be used in the planning process.

The public is invited to provide information to Hydro planners covering special constraints, environmental concerns, weighting factors, official plans, future land use plans, local attitudes, historical sites and buildings, special natural features and so forth. Face-to face meetings and discussions with elected officials, agencies, groups, and individuals are an essential part of this phase.

During this process, computerized line route selection techniques are applied and matrices, cost estimates, etc., are prepared. Information and views obtained at public meetings and discussions are analysed and an interim report is prepared indicating the alternatives which have been identified. This interim report is reviewed with government ministries and presented to the public for detailed discussion to reach a final evaluation.

On the basis of these second-round discussions,

a preferred route is selected and a final report prepared. Hydro then makes this report public and at the same time submits its decision to the minister responsible for review and an order in council authorizing the project to proceed."

One acceptable way of implementing this recommendation would be to ask the Solandt Commission to retain an expert who could in collaboration with Ontario Hydro carry out the necessary studies using the open planning procedure outlined by Hydro to involve conservationists, concerned citizens and also municipal officials and planners of all municipalities that might be affected by the findings of the study. On the basis of the study the consultant would make a report to the Commission. After brief public hearings I would transmit this report to the Minister with my comments and advice on it. I suggest involving the Commission in the open planning in this instance because it has already established friendly contact with most of the groups that would be involved. I am hopeful that if open planning is done that the period between final advice to the Minister and effective initiation of action by Hydro might be greatly shortened. This proposal cannot succeed without the wholehearted and active cooperation of both the Toronto-Centred Region Planners and the Niagara Escarpment Task Force. This is not intended as a recommendation that a Commission of this kind should be involved in similar cases in the future.

Summary and Conclusions

The main conclusion that I have reached as a result of the evidence presented to the Commission is that while Ontario Hydro has demonstrated that the Middle Route they have selected is not a completely unsatisfactory route for the proposed power line they did not produce adequate evidence to support the view that it is the best available route. Hydro's already extensive studies must be supplemented by a much more widespread and systematic study of the entire area including but not limited to the four alternative routes described in their report before it can be concluded that the Middle Route is the best available route or that some other route is preferable. Such a study would naturally have to use a very complete data input and the best computer and overlay techniques for evaluating the complete range of factors that must be considered in choosing a route. I consider that Hydro has satisfactorily established the need for the facilities, the choice of voltage, the reasons for rejecting any major undergrounding, their need to continue the carefully controlled use of herbicides, and many points of lesser importance. All of these can, therefore, be accepted as a basis for the new study.

I recommend further study with great reluctance since it will certainly delay the construction of the line for some time. Any delay will cause further hardship to the landowners on the Middle Route, some of whom have been waiting three years for their land to be purchased. Should the delay be extensive it might also cause even more serious hardship for Hydro users throughout Ontario. Added costs will also undoubtedly result, partly for the study itself, partly arising from the delay in construction and finally any increase in cost that results from changes made to reduce the environmental impact of the line.

These hardships and costs must be important factors to be considered in the proposed study. Nonetheless, I am convinced that the probability of finding a substantially better route in time and at acceptable cost is sufficiently high that the risk must be taken. This better route might consist merely of modifications of the chosen Middle Route in which case the delay might well not be serious. It might coincide with one of the other routes discussed or it might be a combination of elements from several of the routes or a completely new route. Unfortunately, it is almost certain that if a more extensive and careful study leads to the selection of a route that is radically different from the Middle Route the delay in building the line would be at least two years rather than one. Therefore, should the Government decide to recommend a study it would be prudent to ask Ontario Hydro to prepare emergency plans for deferring construction for two or three years or for constructing the necessary lines in stages. In addition, there are several ways in which the Government can help Hydro to accelerate the acquisition of land once the route has been selected. The rapid and effective completion of a study in which all who are affected by the line are intimately involved will require intense activity and wholehearted cooperation. If the spirit shown during the hearings of the Commission continues this target can be met and the goal of completing a line with acceptable social, environmental and economic costs within the required time can then be achieved. It will not be an easy task but I believe that it must be attempted.

APPENDIX A

A brief summary of the hearings held by the Solandt Commission and a list of the principal witnesses who presented evidence or conducted cross-examinations. No effort has been made to list everyone who spoke at the hearings, only those who had a major presentation are herein mentioned. We wish, however, to thank all of those who participated in the hearings.

Location: Ontario Room, Macdonald Block, Queen's Park

July 31st - Presentation of the Ontario Hydro report

Witnesses:

Subject:

Hydro-Electric Power
Commission of Ontario

G.E. Gathercole,
Chairman

Opening remarks

P.G. Campbell,
Assistant Chief Engineer
Design & Construction

Route comparison and
selection

D.J. Gordon,
General Manager

Social and environmental
criteria

H.A. Smith
Chief Engineer

System requirements and
technical considerations

No cross-examination was permitted on
July 31st, 1972, except for points of
clarification.

August 21st - Ontario Room South, Macdonald Block, Queen's Park

- Continuation of Ontario Hydro presentation

Witnesses:

Hydro's Technical Panel

H.P. Smith, Director
System Planning

)
)
)

K.R. McClymont, Engineer
Generation & Transmission
Planning

)
)
)

on Systems Planning

H. Teekman, Engineer
Resources Planning

)
)

Lynn Gordon
Basic Design & Development - Station Design
Engineer

Peter Ralston
Senior Transmission Design - Transmission Line Design
Engineer

Jack Waghorne
Director of Research - Research

The Panel was cross-examined by L. Symmes, representing the Coalition of Concerned Citizens, Mrs. M. Britnell, representing the Concerned Citizens of King Township, and Bruce MacOdrum, Counsel for the Sierra Club.

August 22nd - Ontario Room South, Macdonald Block, Queen's Park
Morning: - Technical Panel resumed stand
Bruce MacOdrum continued cross-examination

Afternoon: - Hydro's Environmental Panel

Witnesses:

J.E. Winter
Chief Forester - Forestry

A.D. Mosher)
Right-of-Way Planning)
Engineer) Transmission Line Engineering

R. Murray)
Supervising Project Engineer)

R.W. Miller
Manager of Property Analysis - Property Branch

They were briefly cross-examined by
Mrs. B. Davis and L. Symmes.

August 23rd - Ontario Room South, Macdonald Block, Queen's Park
- Hydro's Environmental Panel continues
- Were cross-examined by L. Symmes, Chairman, Coalition of Concerned Citizens, H. Parker, Mrs. M. Britnell, Concerned Citizens of King Township, and Greg Cooper, legal counsel for Sierra Club.

- August 24th - Ontario Room South, Macdonald Block, Queen's Park
- Morning: - Environmental Panel continues
- Cross-examination by Alex McLennan, counsel for Uxbridge Township, and Mrs. Barnes
- Afternoon: - Mr. Bruce Howlett, Environmental Planning Consultant, Bruce Howlett, Inc., the Commission's witness, on environmental planning of transmission lines.
- There was no cross-examination but a number of questions were asked for clarification.
- August 25th - Ontario Room South, Macdonald Block, Queen's Park
- Mr. Vernon Crowley, Head of Power Transmission, Shawinigan Power Company, as an expert witness of the Commission on transmission line engineering.
- He was cross-examined by A.D. Gardner, R. Symmes, L. Symmes, Mrs. M. Britnell and Bruce MacOdrum.
- August 28th - Huron Room, Macdonald Block, Queen's Park
- Morning:
- Commission Witnesses:
- | | | |
|-----------------------------|---|-----------------------------|
| W.L. Smith |) | |
| Chief of Pesticides Service |) | |
| Ministry of Environment |) | |
| |) | |
| W.D. Taylor |) | As expert witnesses for the |
| Soils & Crops Branch |) | Commission on Herbicides |
| Ministry of Agriculture |) | and Weed Control practices. |
| & Food |) | |
| |) | |
| Dr. Clayton Switzer |) | |
| Dean, Ontario Agricultural |) | |
| College |) | |
- They were cross-examined by Mrs. Davis, Mrs. M. Britnell, Greg Cooper, Ms. McMillan and L. Symmes.
- Afternoon: - Cross-examination continued
- Mr. L. Higgins, Economist, Load Forecasts, was called to the stand to outline Hydro's load forecast
- He was cross-examined by L. Symmes

- September 7th
- Huron Room, Macdonald Block, Queen's Park
 - Cross-examination continues with L. Higgins and N.J. McMurtrie, Director of Property
 - and in the afternoon the Technical Panel returned
 - They were cross-examined by Greg Cooper, Alex McLennan, L. Symmes, Mrs. M. Britnell, C. Lewis and Bruce MacOdrum.
- September 11th
- Morning:
- Commission introduced, expert witness, Milton Farrow to discuss Official Plans of Ontario Government.
 - Cross-examined by A. Gardner, Mrs. Davis, Greg Cooper, Gail Ferguson and Sally Schreiber.
- Afternoon:
- The Commission introduced, expert witness, Ansel Garfin of the Regional Development Branch to discuss the Parkway Belt.
 - Cross-examined by A. Gardner, L. Symmes, Mrs. M. Britnell and Greg Cooper.
- September 12th
- Morning:
- Ansel Garfin continues on Parkway Belt
 - Cross-examined by Alex McLennan
 - N.J. McMurtrie) of Ontario Hydro
) returned to the
K.R. McClymont) stand
 - Cross-examined by Greg Cooper, A. McLennan and Dr. Solandt.
- September 13th
- Huron Room, Macdonald Block, Queen's Park
 - Hydro's Policy Panel took the stand
G.E. Gathercole, D.J. Gordon, H.A. Smith and P.G. Campbell
 - Cross-examined by L. Symmes, A. McLennan, Bruce MacOdrum and Greg Cooper.

September 13th Evening Session - Central Peel Secondary School,
Richmond Hill, Ontario

- Hydro had a Panel that spoke to the meeting:
R. Ralston, R. Murray, R. Miller
- Chinguacousy, Twp. of - Dr. R.C. Williams, Reeve
- Esquesing, Twp. of - R.T. Howett, Councilor
- Toronto Gore, Twp. of - M. Robinson, Reeve
- Chinguacousy Country
Club Ltd. - C. Lewis, President
- Bruce S. McLaughlin
Associates - B. McLaughlin, President

September 22nd Evening Session - Don Head Secondary School
Richmond Hill, Ontario

- Hydro's spokesmen were:
N. McMurtrie, R.W. Miller
- Richmond Hill, Town of - Wm. C. Lazenby, Mayor
- Vaughan, Twp. of - G.A. Williams, Mayor
- York County Federation
of Agriculture - F. Brumwell, Representative
- There a number of members of the meeting
who asked questions of the Commission or
Hydro. A few of these were Messrs. Coombs,
Hennessy, Samuels, Baker, Ashton and Bates.

September 25th, 27th and 29th - OISE Building, 252 Bloor St. W.,
Toronto, Ontario

- Devoted to Submissions by Organizations,
Municipalities, Associations and Individuals
- Meeting heard from:
Coalition of Concerned Citizens
Concerned Citizens of King Township
Sierra Club
Greenwood Area Ratepayers Association
Whitchurch-Stouffville Township

West Gwillimbury Township
Tecumseth Township
Uxbridge Township
Markham Township
Conservation Council of Ontario
Federation of Ontario Naturalists
Louis A Rice
William Armstrong
Margaret Britnell
Charles Simmons
John von Nostrand

and a brief statement by Ontario Hydro.

Dr. Solandt thanked all who had presented briefs, both written and oral, and complimented all concerned on the fine atmosphere the meetings had displayed. He adjourned the hearings at that time.

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Environmental Planning Consultants

BRUCE E. HOWLETT

EDUCATION

Master of Regional Planning, Harvard University, 1957.

Graduate Studies in Urban Planning, University of Chicago, 1954.

Undergraduate Studies in Engineering, University of Alberta, 1949.

EXPERIENCE

Twenty-two years of experience in comprehensive planning and urban development specializing in studies of the environment and the conflicts of urban growth and economic development.

1970-1972, Consultant in regional planning and environmental studies. Recent assignments have included preparation of the environmental impact statement for the Lake Tahoe Basin; environmental impact study for the Corps of Engineers; a land use plan for an 11,000 acre reservoir required to cool a nuclear electric installation; transmission line siting studies; power plant siting; recreation demand studies for a hydro project in a National Recreation Area; research program to mesh electric system planning with environmental planning; evaluation of the environmental impact of a large regional water development project in the western U. S.; preparation of proposals for river basin environmental studies for a private foundation; county comprehensive plan preparation; expert witness in utility-environmental suit.

Clients include:

- Rockefeller Foundation
- New York State Atomic and Space Development Authority
- Northeast Utilities Service Company
- Niagara Mohawk Power Corporation
- Rensselaer County, New York
- U.S. Army, Corps of Engineers
- Probate Court, LaPeer, Michigan
- Jointly with T. Wirth Associates:
 - Seattle City Light
 - Virginia Electric and Power Company
 - Resources Company (Arizona)
 - Central Arizona Project Association
 - Lake Tahoe Regional Planning Agency

1965-1970, Associate Director of the Hudson River Valley Commission, New York. Directed a large interdisciplinary staff concerned with

regional environmental planning and project review for the Hudson River area extending from New York City to the Adirondacks. The Commission was one of the earliest to undertake planning from an environmental base and to develop methods for assessing the impact of all forms of land development on the natural environment. Particular concerns were scenic, historic, natural and recreational resources and the promotion of compatible economic development.

1962-1965, Headed a planning consulting firm in Seattle. Work assignments were scattered over several western states and included regional and local governmental comprehensive planning, shopping center location studies and economic development analyses. Supervised the preparation of a regional open space system for the Seattle metropolitan area to serve 1.5 million persons.

1958-1961, Supervised planning and land use inventories as part of a major transportation study. Served as Division head of the N. E. Illinois Metropolitan Planning Commission, the planning agency for the Chicago region. Supervised regional open space study, land use studies and related comprehensive planning analyses.

1954-1957, During graduate work, employed part and full time in urban renewal planning for the Hyde Park-Kenwood Community surrounding the University of Chicago, and in community comprehensive planning for Lexington, Massachusetts.

1950-1954, Planner for the City of Edmonton, Canada, engaged in a wide variety of city planning programs.

PUBLICATIONS

Lake Tahoe - An Environmental Impact Statement, with Theodore Wirth and Associates, for the Lake Tahoe, Regional Planning Agency, January 1972.

Environmental Planning for the Electric Utility Industry, Public Utilities. Fortnightly, April 27, 1972

An Interdisciplinary Approach to Transmission Line Routing, with Lionel Barthold, Electrical World, December 1971.

A Land Use Plan for North Anna Reservoir, Virginia, 1971, prepared for Virginia Commission of Outdoor Recreation, in conjunction with Theodore J. Wirth and Associates.

Utility Corridor Offers Access Into Urban Areas, Electrical World, April 15, 1971.

Making Joint Use A reality, presented at the Engineering Research Conference on Joint Utilization of Rights of Way, Deerfield, Mass. July 1969.

(portions reprinted in Electric Power and the Environment, The Energy Policy Staff, Office of Science and Technology, 1970).

The Upper Hudson, in "The Hudson River Basin", League of Voters Education Fund, 1969.

Power Lines and Scenic Values, 1968, Hudson River Valley Commission.

The Use of Computer Graphics in the Hudson River Valley, Proceedings of the N. Y. - N. J. Division, Association of American Geographers, 1968. Reprinted in Socio-Economic Planning Science, London, 1970.

The Hudson, The Report of the Hudson River Valley Commission, 1966.

Determining Urban Growth and Change from Aerial Photograph Comparisons, Highway Research Board, National Research Council, 1963.

ASSOCIATIONS

Member, American Institute of Planners

Member, American Society of Planning Officials

Member, Regional Science Association

Founding Member, Hudson River Environmental Society

